Program Plan

NASA Shared Capability Assets Program (SCAP)

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1.0 Program Overview

1.1 Introduction

In August 2005, at the direction of the NASA Administrator, the Office of Infrastructure and Administration initiated preliminary planning to address an Agency need to ensure that certain operational core assets and capabilities are available to support NASA's current and future missions.

The Shared Capability Assets Program (SCAP) was authorized to proceed by the Strategic Management Council (SMC) in September 2005, and was formally established in Fiscal Year 2006. The SCAP is the Agency's mechanism for executing Section 4.11.2.d of NASA Policy Directive (NPD) 1000.3, The NASA Organization. This section states that the Associate Administrator for Institutions and Management is responsible for ... "Ensuring (that) personnel competencies and facility capabilities required to meet NASA's strategic needs are identified and provided." NPD 1000.3 is incorporated by reference into this Program Plan and can be found at the following URL:

http://nodis3.gsfc.nasa.gov/npg_img/N_PD_1000_003C_/N_PD_1000_003C__main.pdf

An ***asset*** is defined as a unique entity (such as a wind tunnel test facility or a personnel competency such as finite element analyst) that performs a specific function or task for the Agency. Predominantly, assets are multi-mission, regionally dispersed, stand-alone systems or core competencies that may have limited-duration, scheduled use.

A ***capability*** is defined as the grouping of like assets. Implicit to the definition of capabilities and assets is the inclusion of the associated workforce with the appropriate knowledge, experience, and skill.

During program formulation, three facility-related capabilities were identified and included in the SCAP portfolio:

- Aeronautics Test Program (wind tunnels).
- Rocket Propulsion Testing (rocket engine test stands).
- Supercomputing capabilities.

Currently the SCAP portfolio has been expanded with the addition of:

- Thermal Vacuum Acoustic Test capability.
- Arc-Jet Test capability.
- Flight Simulation capability.

Periodically, other Agency assets and capabilities will be examined to determine if they will be included in the SCAP.

1.1.1 Relevance to National Priorities

NASA is responsible for stewardship of space and aeronautical laboratory systems, facilities, core competencies, and engineering and research capabilities, many of which are unique in the United States. The SCAP will ensure that assets and capabilities deemed vital to NASA's current and future success are sustained in order to serve Agency and national needs.

1.1.2 Relevance to the NASA Mission

The SCAP will sustain an appropriate level of capability for selected high value, unique mission-oriented assets that are required for the execution of NASA programs. All assets and capabilities identified for sustainment either have validated mission requirements or have been identified as potentially required for future missions and, therefore, are sustained for risk mitigation purposes pending mission requirements maturation. The SCAP will continually assess the assets and capabilities to revalidate Agency need and disposition those that are no longer required.

1.2 Outcomes, Goals and Metrics

The SCAP performs an Agency cross-cutting function that encompasses assets and capabilities that may be utilized across multiple Mission Directorates and program areas. This function is to ensure that key assets and capabilities, as elements of the Agency's physical and intellectual infrastructure, are available to perform the Agency's mission. Therefore, the SCAP goals are directly linked to the Agency's Vision, mission, and strategic outcomes.

1.2.1 Outcomes

The SCAP outcome as stated in the 2006 NASA Strategic Plan:

- Outcome SC-1: Establish and maintain selected Agency-level shared capabilities, across multiple classes of assets (e.g., wind tunnels, vacuum chambers, etc.), to ensure that they will continue to be available to support the missions that require them.

The 2006 NASA Strategic Plan can be found at the following URL:

http://www.nasa.gov/pdf/142302main_2006_NASA_Strategic_Plan.pdf

1.2.2 Goals

To satisfy the outcome, the SCAP has established goals that identify, prioritize, maintain, and provide oversight for the Agency assets and capabilities that are deemed essential to the future needs of NASA and the Nation, including some that may lack an adequate business base throughout the budget horizon. The specific SCAP goals, as approved by the SMC, are to:

- Ensure that NASA's key capabilities and critical assets will continue to be available in the future to support the missions that require them. Capabilities include the right mix of the facility, equipment, core competencies, and skilled staff.
- Identify and prioritize NASA's essential assets, and implement strategic investment decisions to sustain, enhance, replace, modify, or dispose of them based on NASA and/or national needs.

1.2.3 Metrics

The SCAP metrics and their associated performance targets are:

- Cost Performance – Goal is for at least 85 percent of the assets to stay within 5 percent of their plan.
- Schedule Performance – Goal is for 100 percent of the asset milestones to be completed on schedule.
- Technical Performance – Goal is to achieve 100 percent of the customer's negotiated technical performance requirements.
- Mission Dependency – Three-category rating (mission critical, mission dependent not critical, and nonmission dependent) indicating an assets' relative importance to a mission. This metric identifies the dependency of a mission on an asset in terms of interruptability,

relocateability, and replaceability. Goal is the reduction of the number of nonmission-dependent assets.

1.3 Customer and Stakeholder Definition and Advocacy

1.3.1 The SCAP customers include:

- Agency programs that require use of SCAP assets and capabilities.
- The relevant Level 2 Program Offices.
- NASA's Office of Infrastructure and Administration.
- NASA organizations that manage the day-to-day operations of the SCAP assets/capabilities.
- Other government, commercial, or university/nonprofit entities that use SCAP assets through reimbursable or nonreimbursable agreements.

1.3.2 The SCAP Stakeholders include:

- The NASA Mission Directorates.
  - Aeronautics Research Mission Directorate (ARMD).
  - Exploration Systems Mission Directorate (ESMD).
  - Science Mission Directorate (SMD).
  - Space Operations Mission Directorate (SOMD).
- The NASA Centers that operate the assets.

1.3.3 Advocacy

Advocacy is based on NASA's desire to ensure the long-term viability of its critical assets and capabilities. Periodically, the existing SCAP assets and capabilities will be reviewed, and calls for proposals for additional assets to be included under the SCAP will be issued. The SMC is the review and approval authority for the SCAP capabilities, ensuring high visibility. Advocacy is accomplished through the following activities:

- Periodic calls for additional Agency assets to be included in the SCAP.
- Periodic management reviews and performance reports.
- Asset/capability operational reviews.
- The annual budget cycle.
- Agency and Center operational and engineering panels.

1.4 Program Authority and Structure

The SCAP was authorized to proceed by the SMC in September of 2005.

1.4.1 Architecture

The SCAP architecture is characterized as a series of capabilities with underlying assets, as defined in Section 1.1. Capabilities within the SCAP portfolio are funded either by the SCAP or by the Mission Directorates. The SCAP performs an Agency-level management and advocacy function for the SCAP-funded capabilities and performs an insight, oversight, and advocacy function for Mission Directorate-funded capabilities.

These capabilities are managed by a Portfolio Manager. Either the funding Mission Directorate or the SCAP Director will designate the Portfolio Manager, with priority for this designation given to the funding entity.

The SCAP will provide a Lead Analyst for all capabilities that are managed by a Mission Directorate-based/assigned Portfolio Manager. The Portfolio Manager will perform the Lead Analyst function for the SCAP-funded capabilities.

Assets are managed by an Asset Manager. Asset Managers typically are designated by the Center that houses and operates the asset. Funding to cover the basic operations, modernization, and upgrade costs of an asset is negotiated by the Asset Manager and the Portfolio Manager.

1.4.2 Management Structure

Shared Capabilities is a single-program theme consisting of the Shared Capability Assets Program. The SCAP is a corporately managed program; with asset and capability budget authority resident either in the Mission Directorates or directly in the SCAP Office.

The Shared Capabilities Theme Director is the SCAP Director. The SCAP Director is located at NASA Headquarters (HQ) in the Shared Capability Assets Division, Office of Infrastructure and Administration, Office of Institutions and Management. The Portfolio Managers are located either in the SCAP Office at NASA HQ or at a location designated by the funding Mission Directorate, with priority for location given to the funding entity. The SCAP-funded Portfolio Managers report to the SCAP Director, and the Mission Directorate-based Portfolio Managers report to the respective Mission Directorate. The Lead Analyst(s) are located at NASA HQ and report directly to the SCAP Director. The Asset Managers, who for SCAP purposes report programmatically to the Portfolio Manager, are located at the Centers that house the asset.

1.4.3 Assignment of Responsibilities

The relevant governing authority is the SMC, with review and approval authority for the establishment or termination of a capability and for authority to proceed with capability disposition decisions. The Assistant Administrator for Infrastructure and Administration is the review and approval authority for actions to terminate, transfer, or otherwise divest assets. Specific responsibilities are as follows:

The Mission Directorates are responsible for:

- Providing appropriate planning and resources required for the execution of Mission Directorate programs.
- Designating the Portfolio Manager for Mission Directorate-funded capabilities.

The SCAP Director is responsible for:

- Selection of (additional) SCAP assets/capabilities.
- Establishing the general technical, management, and financial guidelines with emphasis on the management processes to be followed, including the implementation and disposition processes.
- Program oversight, including assessing progress and presenting information at relevant reviews.
- Providing Lead Analyst(s) for the Mission Directorate and SCAP-funded capabilities.
- Participating in the overall SCAP and underlying asset/capability budget negotiations.

The Portfolio Managers are responsible for:

- Insight/oversight of capability requirements with respect to relevant NASA programs and other customers for their suite of assets.
- Insight/oversight of capability performance in terms of cost, schedule, performance, risk, issues, accomplishments, and workforce status.
- Insight/oversight of the capability's income sources (including program direct and reimbursable work) and facility utilization projections.
- Reporting capability performance to the SCAP Director as required.
- Preparing relevant planning documents.
- Managing the SCAP funds across the capability's suite of assets.
- Leading the budget formulation efforts for the assets and capabilities.
- Rebalancing the capability portfolio due to changing asset utilization.
- Providing guidance and monitoring disposition activities.

- Conducting asset classification (Section 2.1.3) and basic operations, modernization, upgrade, and disposition (Section 2.1.4) reviews.

The Lead Analysts are responsible for:

- Interface and coordination with the Portfolio Manager on NASA HQ-level issues involving NASA Senior Management, Congressional actions, NASA HQ Functional Offices, the Office of the Chief Financial Officer (OCFO), the Office of Program Analysis and Evaluation (PA&E), and the Mission Directorates.
- Oversight of capability costing, scheduling, performance, and risk. Supporting the Agency's Planning, Programming, Budgeting and Execution System (PPBES) efforts.

The Asset Managers are responsible for:

- The day-to-day operations of the SCAP assets.
- Preparing relevant planning documents.

The Centers are responsible for:

- Providing personnel to operate, maintain, and upgrade SCAP assets.
- Providing the appropriate level of Center Management and Operations (CM&O) budget to support the SCAP asset.

2.0 Program Baseline

Initial formulation resulted in selection of the following capabilities (with budget authority maintained by the funding Mission Directorates):

- The Aeronautics Test Program (ATP) funded by the ARMD.
- Rocket Propulsion Testing (RPT) funded by the SOMD.
- High-End Computing Columbia (HECC) funded by the SMD.

The following additional assets and capabilities were added in FY 2007 (with SCAP funding/budget authority):

- Thermal Vacuum Acoustic Test capability.
- Arc-Jet Test capability.
- Flight Simulation capability.

2.1 Program Requirements

The SCAP requirement as identified by the SMC is to identify, prioritize, and manage a select suite of Agency key assets/capabilities that are deemed to be essential to the future needs of NASA or the Nation, including some capabilities that lack an adequate business base throughout the budget horizon.

This requirement is compliant with Section 4.11.2.2 of NPD 1000.3, as described in Section 1.1 of this Program Plan, and with Executive Order 13327, Federal Real Property Asset Management. Executive Order 13327 can be found at the following URL:

http://www.ofee.gov/eo/13327.pdf

2.1.1 Program Roles and Responsibilities

The SCAP roles and responsibilities (as approved by the SMC) are:

- Identify NASA's critical research, design, development, test, and evaluation assets based on selection criteria.
- Prioritize assets in terms of importance to achieving NASA's Strategic Plan and the Vision for Space Exploration.
- Make strategic investment recommendations to Agency Senior Management to replace, modify, or disposition those assets based on NASA and/or national needs.
- Determine the resource requirements for maintaining those selected critical assets in a minimal "open the door" configuration.
- Provide program management and performance reporting for the capabilities within the SCAP portfolio.
- Develop funding mechanisms to ensure the availability and viability of those critical assets for future NASA programs.
- Implement and advocate policies, including pricing, that facilitate appropriate capture of reimbursable work.
- Determine disposition of identified assets and ensure timely implementation of the chosen course of action; e.g., closure, excessing, preserving, and mothballing.

2.1.2 Asset/Capability Selection Criteria

The selection criteria (as approved by the SMC) for asset/capability inclusion into the SCAP are:

- The asset is critical to carry out NASA's current and future missions.
- The asset is a shared capability.

- No feasible alternatives exist.
- The asset provides a unique capability to the Nation or world.
- The asset supports areas in which NASA is uniquely qualified to perform and where investments can be highly leveraged to add value to overall business or mission.
- The functionality of the asset is hard to replicate without significant investment.
- The asset has high replacement cost vs. operations and maintenance cost.
- The asset is central to competitiveness.
- The asset can be priced based on usage; demand can be forecast to enable asset cost estimate.
- The current customer base is not sufficient to economically sustain the asset and allow stable pricing.

These factors, along with other analysis and programmatic considerations, are used to determine whether an asset will be included in the SCAP. If a specific asset is determined to be within the purview of the SCAP, then all like Agency assets will be grouped together and considered as a single capability.

The SCAP will continually assess requirements and performance of the assets and capabilities. Assets and/or capabilities may be added to, or withdrawn from the SCAP account based on Agency priorities, resources, and balance among the assets/capabilities being considered.

2.1.3 Physical Asset Classification

Per NPR 8800.15A, Real Estate Management Program Implementation Manual, physical assets are classified as either active or inactive. Active physical assets are further designated as overutilized, utilized, under-utilized, or not utilized. Inactive physical assets are further designated as standby, mothballed, or abandoned. NPR 8800.15 is incorporated by reference into this Program Plan and can be found at the following URL:

http://nodis3.gsfc.nasa.gov/npg_img/N_PR_8800_015A_/N_PR_8800_015A_.pdf

2.1.4 Funding Policy

The SCAP budget and acquisition strategy (Section 3.3) and the SCAP budget (Section 2.3) are described elsewhere in this Program Plan. In general, the SCAP funds will be used to sustain an asset or capability in the condition mandated by the classification/designation of its underlying assets (Section 2.1.3). Specifically, the SCAP funds may be utilized for:

- Asset/Capability Sustainment.
- Asset/Capability Basic Operations.
- Asset/Capability Modernization.
- Asset/Capability Upgrade.
- Asset/Capability Disposition.

In general, the asset/capability sustainment funds are directed toward the intellectual infrastructure associated with core competencies, and the asset/capability basic operations, modernization, upgrade, and disposition funds are directed toward the infrastructure associated with testing facilities. The specific funding levels for these activities, as well as the specific asset, capability, and Center costs that the SCAP will cover, will be negotiated during the annual budget process.

Sustainment – The SCAP may provide funding for the direct costs and the directly associated costs for the sustainment of core competencies. The competencies that may be funded will be consistent with the NASA Strategic Plan and with NPR 3010.1, Strategic Workforce Management Process. NPR 3010.1 is incorporated by reference into this Program Plan and may be found at the following URL:

http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PR_3010_0001_&page_name=main

Basic Operations – The SCAP may provide funding for the basic operating costs of an SCAP asset or capability. Basic operations are defined as the direct costs and the directly associated costs for the following activities:

- Management/Operations/Sustaining Engineering.
    - Critical skills required for safe and effective operations.
    - Requisite certifications.
    - Expendable base - materials and consumables.
    - Schedules – readiness reports.
    - Safety systems, hazard/failure, and hazard control.
    - Control of samples and customer-provided materials.
    - Hazardous chemical inventories.
    - System configuration and optimization.
    - Resource allocation and management.
- Maintenance – Computing Systems Hardware and Software.
    - Critical skills required for safe and effective operations.
    - Maintenance and operations procedures.
    - Information technology networks and security.
    - Hardware/software systems sustaining engineering.
- Maintenance – Noncomputing Systems.
    - Critical skills required for safe and effective operations.
    - Preventive and sustaining maintenance of hardware.

  - Routine and minor repair, replacement, and refurbishment.
  - Maintenance and operations procedures.
- Other Services.
  - Configuration management and control and documentation.
  - Logistics and property management.
  - Calibration of facility instrumentation and inventory records.
  - Information technology user services.

The SCAP funding for basic operations will be commensurate with the asset classification/designation (Section 2.1.3).

Modernization – The SCAP may provide funding to update and/or replace the components, subsystems, or systems within an existing SCAP asset or capability. To qualify for modernization funding, the components, subsystems, or systems in general must be technologically obsolete and at significant risk of failure. Modernization is defined as the direct costs and the directly associated costs for items such as:

- Computer hardware/software systems.
- Data acquisition and control systems.
- Hydraulic, pneumatic, mechanical, electrical, and power systems.

SCAP modernization funding is intended for risk mitigation through the replacement of obsolete technology. It is not intended for replacement of an entire asset or for upgrading the asset with additional capability.

Upgrade – The SCAP may provide funding for the direct costs and the directly associated costs for items/activities that enable additional performance within an existing SCAP asset or capability. The upgrade must be aligned with long-term Agency goals and with Mission Directorate program activities.

Disposition – The SCAP may provide funding to enable the disposition of SCAP assets or capabilities that are classified as active but are underutilized or not utilized; inactive; or are transitioning between active, inactive, mothballed, and abandoned. In these cases, SCAP may provide funding for the following:

- Sustain an asset/capability between program utilization periods.
- Sustain an asset/capability when it is underutilized or not utilized.
- Sustain an asset/capability in standby or mothball status.
- Transition an asset/capability when its classification changes.

If it is determined that an asset or capability will be shared (therefore under SCAP purview) but has not been selected to receive SCAP funding for either sustainment, basic operations, modernization, or upgrade, the

SCAP Director will recommend to the Assistant Administrator for Infrastructure and Administration a disposition approach such as transfer, excess, mothball, abandon, demolish, or other options.

2.1.5 Reimbursable and Nonreimbursable Pricing Policy

The SCAP will comply with all relevant Agency policies, directives, and other requirements regarding reimbursable and nonreimbursable pricing for the utilization of SCAP assets/capabilities.

2.2 Program Schedule

As a cross-cutting Agency support program, the SCAP does not operate by a schedule or discrete milestones. The SCAP does, however, participate in the Agency's annual budget process and will periodically solicit proposals for new assets and capabilities to be included in the SCAP.

2.2.1 Planned Activities

Major activities planned for FY 2007 and beyond include:

- Continue to prioritize funding requirements and select classes of assets for inclusion in the SCAP.
- Identify reinvestment and recapitalization opportunities within and among the assets, and execute the approved changes (e.g., reallocate funds, and upgrade facilities).
- Establish consistent methodology for determining capability utilization.
- Refine multiyear projections, income summaries, and budget year execution plans.
- Ensure consistent implementation of reimbursable and non-reimbursable pricing policy for SCAP assets and capabilities.
- Implement disposition planning of selected assets at the direction of the SMC.

2.3 Program Resources

The SCAP funding, based on the FY 2008 Office of Management and Budget (OMB) submit, is described in table 2.3-1 below. The SCAP has budget insight and oversight (with budget authority maintained in the relevant Mission Directorate) for RPT, ATP, and HECC. The SCAP has direct budget authority for Flight Simulators, Thermal Vacuum Chambers, and the Arc-Jet capability.

Table 2.3-1 - SCAP Resources (FY 2008 OMB Submit)

Mission Directorate Managed Capabilities

Current SCAP Programs	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Rocket Propulsion Test Program (RPT)	$ 43,679	$ 41,778	$ 41,678	$ 44,136	$ 42,971	$ 42,634
High End Computing-Columbia (HECC)	$ 38,936	$ 40,930	$ 41,920	$ 42,800	$ 43,722	$ 44,822
Aeronautics Test Program (ATP)	$ 66,684	$ 67,699	$ 69,164	$ 70,882	$ 72,882	$ 72,882
Aero Ground Test Facilities	$ 43,284	$ 44,199	$ 45,164	$ 46,182	$ 47,382	$ 47,382
Flight Ops & Test Infrastructure	$ 23,400	$ 23,500	$ 24,000	$ 24,700	$ 25,500	$ 25,500
Total Current SCAP Program Funding	**$ 149,299**	**$ 150,407**	**$ 152,762**	**$ 157,818**	**$ 159,575**	**$ 160,338**

SCAP-Managed Capabiltieis

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Flight Simulation	$ 11,200	$ 11,100	$ 11,500	$ 11,900	$ 12,300	$ 12,300
Thermal Vacuum Chambers	$ 6,900	$ 7,000	$ 7,300	$ 8,300	$ 8,500	$ 8,500
ArcJet Capability	$ 8,900	$ 9,000	$ 9,300	$ 9,700	$ 10,000	$ 10,000
Reserve	$ 1,000	$ 1,000				
Total New Candidates	**$ 28,000**	**$ 28,100**	**$ 28,100**	**$ 29,900**	**$ 30,800**	**$ 30,800**
Total SCAP Funding	$ 177,299	$ 178,507	$ 180,862	$ 187,718	$ 190,375	$ 191,138

3.0 Subplans

3.1 Controls and Compliance

3.1.1 Compliance with NASA Policies and Directives

Compliance with NASA policies, directives, and other requirements will be ensured through adherence to relevant policy documents.

3.1.2 Change Control

Asset/capability-controlled items and the threshold requiring approval by the SCAP Director are as follows:

- Changes and/or adjustments in a fiscal year greater than 10 percent of a capability characteristic (cost, schedule, and performance).
- Changes related to participation of other NASA Centers.

3.1.3 Reserves Management Strategy

The overall SCAP budget contains minimal program reserves. These reserves are utilized at the discretion of the SCAP Director.

3.1.4 Independent Assessments

NPR 7120.5C, NASA Program and Project Management Processes and Requirements, does not mandate independent assessments or reviews for institutional programs such as the SCAP. Therefore, the SCAP will not conduct a Concept Decision Review, Preliminary Non-Advocate Review (NAR), NAR, Production Review, Program Implementation Review, Program Safety, or a Mission Readiness Review. Other independent reviews (e.g. Those conducted by the NASA Engineering Safety Center and Center safety organizations) may be conducted as needed. NPR 7120.5C may be found at the following URL:

http://nodis3.gsfc.nasa.gov/npg_img/N_PR_7120_005C_/N_PR_7120_005C_.pdf

3.2 Relationships to Other Programs and Agreements

In general, relationships/agreements will be managed by the SCAP Director or the Mission Directorates as appropriate. Capability-level relationships will be managed by the Portfolio Managers.

3.2.1 Internal Relationships/Agreements

The SCAP Director will coordinate with NASA's overall real property management, human resources management, facility planning initiatives, execution initiatives, and personal property for SCAP-managed capabilities to ensure that the needs of the SCAP are considered in long-term planning. The Portfolio Managers will coordinate capability-specific requirements with NASA programs and customers for their suite of assets. The Asset Managers will coordinate asset-specific requirements with NASA programs and customers for their assets.

3.2.2 External Relationships/Agreements

The SCAP Director and the Portfolio Managers will coordinate with non-NASA organizations, such as the Department of Defense (DoD) and industry, to ensure that the needs of the SCAP are considered in long-term planning with outside interests. The SCAP Director shall also maintain cognizance of the non-NASA assets/capabilities that could be utilized by NASA programs.

3.3 Budget and Acquisition Strategy

Asset/capability budgets are established through the PPBES process and through negotiation involving the SCAP Director (as appropriate), the OFCO, PA&E, the relevant Mission Directorate, the relevant Program Office, and the Center that operates the asset.

3.3.1 Cost Control

The SCAP financial data as provided by NASA's budget system will be reviewed quarterly. Cost control will be accomplished through adherence to established fiscal year funding guidelines.

3.3.2 Initiation Strategy

Strategy for selection of new assets/capabilities is as follows: The SCAP Director will periodically, and as needed to support the annual PPBES process, issue a Call for Proposals to the Centers, Mission Directorates, and other sources. The proposals will be evaluated, based on the asset/capability Selection Criteria (Section 2.1.2), by members of the Shared Capability Division. Proposals meeting the selection criteria are recommended to the SMC.

3.4 Technology

Technology strategy is unique to each asset/capability and, therefore, will be documented, as needed, in applicable program plans.

3.5 Cooperation and Commercialization

Technology transfer and commercialization are the responsibility of the Center that manages the day-to-day operations of the asset/capability.

3.6 Data Management and Distribution

Data management and distribution requirements will be determined by the Portfolio Manager in coordination with other Agency programs and SCAP stakeholders. Implementation is the responsibility of the Center that manages the day-to-day operations of the asset/capability.

3.7 Safety and Mission Assurance

Safety and mission assurance is the responsibility of the Center that manages the day-to-day operations of the asset/capability.

3.8 Risk Management Strategy

The SCAP will utilize a risk management process consistent with standard NASA practices. Programmatic risks are summarized in Table 3.8-1 below.

Table 3.8-1 – Risk Summary

Risk #	Risk Description	Impacted Capability	Mitigation Approach	Consequence (scale of 1-5)	Likelihood (scale of 1-5)
1	Overhead rates increase	All	Prioritize and descope	2	4
2	Funding reduced	All	Prioritize and descope	2	3
3	Funding delayed	All	Replan adjust phasing	2	4
4	Key personnel availability	All	Recruit/reassign personnel	3	1

3.9 Environmental Impact

Environmental management is the responsibility of the Center that manages the day-to-day operations of the asset. The Centers will ensure that implementation is in accordance with NASA policy, requirements, and procedures.

3.10 Institutional and Logistics

The requisite institutional facilities, equipment, and logistics will be documented in relevant asset/capability plans.

3.11 Physical and Information Technology Security

Physical and information technology security is the responsibility of the Center that manages the day-to-day operations of the asset.

3.12 Verification and Validation

Verification and validation is the responsibility of the Center that manages the day-to-day operations of the asset.

3.13 Reviews

The Portfolio Manager will conduct Quarterly Reviews according to the schedule shown in Table 3.13-1:

Table 3.13-1: Quarterly Review Schedule

FY Qtr	End of 1st Qtr	End of 2nd Qtr	End of 3rd Qtr	End of 4th Qtr
Review Emphasis	Technical and Programmatic Performance	PPBES Formulation	Technical and Programmatic Performance	Accomplishments and Forward Planning

All reviews will include the standard elements of risk, cost, schedule, and performance. Emphasis within the review cycle will be as follows:

- The Technical and Programmatic Performance Reviews will emphasize the technical content, risk, progress, and performance along with the schedule and cost status. The first quarter review will occur after the OMB pass back so its impact may be assessed. The third quarter review will coincide with the end of current FY+1 PPBES planning and implementing Center's budget submission.

- The PPBES Formulation Review will emphasize risk, ability to meet the success criteria, and the resource inputs into the Agency's budget formulation process. Changes in asset classification (Section 2.1.3) and requests for resources for sustainment, basic operations, modernization, upgrade, and disposition (Section 2.1.4) will be presented during this review. This review will occur about a third of the way through the PPBES process, thereby enabling a review of the budget formulation, risks, and updated cost/schedule.

- The Accomplishments and Forward-Planning Review emphasizes the end-of-fiscal year accomplishments and implementation plans for the upcoming year. This coincides with Agency decisions for the upcoming fiscal year and the plan for the following year, thereby enabling a check to ensure that program goals are aligned with Agency goals.

After each review, the Portfolio Manager will prepare a written report summarizing the following:

- Assessment of actual costs with respect to the costing plan.
- Assessment of accomplishments with respect to SCAP outcomes, goals, and metrics.
- Analysis of significant variances from the plan, forecast impacts.
- An estimate at completion (if applicable).
- Any changes in risk status.
- Resources requests (if applicable).

The SCAP Office will consolidate the capability summary reports and provide this report to the Assistant Administrator for the Office of

Infrastructure and Administration, the Center Directors, and others as appropriate.

3.14 Educational and Public Outreach Plan

Relevant Education and Public Outreach is the responsibility of the Center that manages the day-to-day operations of the asset.

3.15 Change Log

Changes to this Program Plan will be documented in the Change Log Table below:

Table 3.15-1 - Change Log Table

SCAP Program Plan Change Log			
Date	**Section**	**Description**	**Signature**

3.16 Appendix

Table 3.16-1 – Acronym Definitions

ARMD	Aeronautics Research Mission Directorate
ATP	Aeronautics Test Program
CM&O	Center Maintenance and Operations
DoD	Department of Defense
ESMD	Exploration Systems Mission Directorate
HECC	High-End Computing Columbia
HQ	Headquarters
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
OCFO	Office of the Chief Financial Officer
OMB	Office of Management and Budget
PA&E	Program Analysis and Evaluation
PPBES	Planning, Programming, Budgeting and Execution System
RPT	Rocket Propulsion Test
SCAP	Shared Capability Assets Program
SMC	Strategic Management Council
SMD	Science Mission Directorate
SOMD	Space Operations Mission Directorate